begin using this test procedure as soon as possible.

1. *Scope:* This appendix covers the test requirements used to measure the hydraulic performances of water closets and urinals.

2. Test Apparatus and General Instructions

a. The test apparatus and instructions for testing water closets shall conform to the requirements specified in section 7.1, General, subsections 7.1.1, 7.1.2, 7.1.3, 7.1.4, and 7.1.5 of ASME A112.19.2–2008 (incorporated by reference, *see* §430.3). The flushometer valve used in the water consumption test shall represent the maximum design flush volume of the water closet. Measurements shall be recorded at the resolution of the test instrumentation. Calculations of water consumption for each tested unit shall be rounded off to the same number of significant digits as the previous step.

b. The test apparatus and instructions for testing urinals shall conform to the requirements specified in section 8.2, Test Apparatus and General Instructions, subsections 8.2.1, 8.2.2, and 8.2.3 of ASME A112.19.2–2008 (incorporated by reference, *see* §430.3). The flushometer valve used in the water consumption test shall represent the maximum design flush volume of the urinal. Measurements shall be recorded at the resolution of the test instrumentation. Calculations of water consumption for each tested unit shall be rounded off to the same number of significant digits as the previous step.

3. Test Measurement

a. Water closets:

(i) The measurement of the water flush volume for water closets, expressed in gallons per flush (gpf) and liters per flush (Lpf), shall be conducted in accordance with the test requirements specified in section 7.4, Water Consumption Test, of ASME A112.19.2–2008 (incorporated by reference, *see* §430.3). For dual-flush water closets, the measurement of the water flush volume shall be conducted separately for the full-flush and reduced-flush modes and in accordance with the test requirements specified section 7.4, Water Consumption Test, of ASME A112.19.2–2008.

(ii) Static pressure requirements: The water consumption tests of siphonic and blowout water closets shall be conducted at two static pressures. For flushometer valve water closets with a siphonic bowl, the test pressures shall be 80 psi and 35 psi. For flushometer valve water closets with a blowout bowl, the test pressures shall be 80 psi and 45 psi. The test shall be run three times at each pressure as specified in section 7.4.3 ''Procedure,'' of ASME A112.19.2–2008 (incorporated by reference, *see* §430.3). The final measured flush volume for each tested unit shall be the average of the total flush volumes recorded at each test pressure as specified in section 7.4.5 ''Performance,'' of ASME A112.19.2–2008.

(iii) Flush volume and tank trim component adjustments: For gravity flush tank water closets, trim components that can be adjusted to cause an increase in flush volume, including (but not limited to) the flapper valve, fill valve, and tank water level, shall be set in accordance with the printed installation instructions supplied by the manufacturer. If the installation instructions for the model to be tested do not specify trim setting adjustments, these trim components shall be adjusted to the maximum water use setting so that the maximum flush volume is produced without causing the water closet to malfunction or leak. The water level in the tank shall be set to the maximum water line designated in the printed installation instructions supplied by the manufacturer or the designated water line on the tank itself, whichever is higher. If the printed installation instructions or the water closet tank do not indicate a water level, the water level shall be adjusted to 1±0.1 inches below the top of the overflow tube or 1± 0.1 inches below the top rim of the water-containing vessel (for gravity flush tank water closets that do not contain an overflow tube) for each designated pressure specified in Table 5 of ASME A112.19.2–2008 (incorporated by reference, *see* §430.3).

b. Urinals—The measurement of water flush volume for urinals, expressed in gallons per flush (gpf) and liters per flush (Lpf), shall be conducted in accordance with the test requirements specified in section 8.6, Water Consumption Test, of ASME A112.19.2–2008 (incorporated by reference, *see* §430.3). The final measured flush volume for each tested unit shall be the average of the total flush volumes recorded at each test pressure as specified in section 8.6.4 ''Performance,'' of ASME A112.19.2–2008.

[63 FR 13317, Mar. 18, 1998, as amended at 78 FR 62987, Oct. 23, 2013]

Appendix U to Subpart B of Part 430—Uniform Test Method for Measuring the Energy Consumption of Ceiling Fans

1. *Scope*. This appendix covers the test requirements used to measure the energy performance of ceiling fans.

2. *Definitions:*

a. *Airflow* means the rate of air movement at a specific fan-speed setting expressed in cubic feet per minute (CFM).

b. *Airflow efficiency* means the ratio of airflow divided by power at a specific ceiling fan-speed setting expressed in CFM per watt (CFM/watt).

3. *Test Apparatus and General Instructions:* The test apparatus and instructions for testing ceiling fans shall conform to the requirements specified in Chapter 3, ''Air-Delivery Room Construction and Preparation,'' Chapter 4, ''Equipment Set-up and Test Procedure,'' and Chapter 6, ''Definitions and Acronyms,'' of the EPA's ''ENERGY STAR Testing Facility Guidance Manual: Building a Testing Facility and Performing the Solid State Test Method for ENERGY STAR Qualified Ceiling Fans,'' Version 1.1, December 9, 2002 (Incorporated by reference, see §430.22). Record measurements at the resolution of the test instrumentation. Round off calculations to the same number of significant digits as the previous step. Round the final energy consumption value to the nearest whole number as follows:

(i) A fractional number at or above the midpoint between the two consecutive whole numbers shall be rounded up to the higher of the two whole numbers; or

(ii) A fractional number below the midpoint between the two consecutive whole numbers shall be rounded down to the lower of the two whole numbers.

4. *Test Measurement:* Measure the airflow and airflow efficiency for ceiling fans, expressed in cubic feet per minute (CFM) and CFM per watt (CFM/watt), in accordance with the test requirements specified in Chapter 4, ''Equipment Setup and Test Procedure,'' of the EPA's ''ENERGY STAR Testing Facility Guidance Manual: Building a Testing Facility and Performing the Solid State Test Method for ENERGY STAR Qualified Ceiling Fans,'' Version 1.1, December 9, 2002 (Incorporated by reference, see §430.22). In performing the airflow test, measure ceiling fan power using a RMS sensor capable of measuring power with an accuracy of ±1 %. Prior to using the sensor and sensor software it has selected, the test laboratory shall verify performance of the sensor and sensor software. Measure power input at a point that includes all power consuming components of the ceiling fan (but without any attached light kit energized). Measure power at the rated voltage that represents normal operation continuously over the time period for which the airflow test is conducted, and report the average value of the power measurement in watts (W). Use the average value of power input to calculate the airflow efficiency in CFM/W.

[71 FR 71366, Dec. 8, 2006]

APPENDIX V TO SUBPART B OF PART 430—UNIFORM TEST METHOD FOR MEASURING THE ENERGY CONSUMPTION OF CEILING FAN LIGHT KITS

1. *Scope:* This appendix covers the test requirements used to measure the energy performance of ceiling fan light kits.

2. *Definitions:*

a. *Input power* means the actual total power used by all lamp(s) and ballast(s) of the light kit during operation, expressed in watts (W) and measured using the lamp and ballast packaged with the kit.

b. *Lamp ballast platform* means a pairing of one ballast with one or more lamps that can operate simultaneously on that ballast. A unique platform is defined by the manufacturer and model number of the ballast and lamp(s) and the quantity of lamps that operate on the ballast.

c. *Lamp lumens* means a measurement of luminous flux expressed in lumens and measured using the lamp and ballast shipped with the fixture.

d. *System efficacy per lamp ballast platform* means the ratio of measured lamp lumens expressed in lumens and measured input power expressed in watts (W).

3. *Test Apparatus and General Instructions:*

(a) The test apparatus and instruction for testing screw base lamps packaged with ceiling fan light kits that have medium screw base sockets shall conform to the requirements specified in section 2, ''Definitions,'' section 3, ''Referenced Standards,'' and section 4, ''CFL Requirements for Testing'' of DOE's ''ENERGY STAR Program Requirements for [Compact Fluorescent Lamps] CFLs,'' Version 3.0, (Incorporated by reference, see §430.22). Record measurements at the resolution of the test instrumentation. Round off calculations to the same number of significant digits as the previous step. Round off the final energy consumption value to a whole number as follows:

(i) A fractional number at or above the midpoint between the two consecutive whole numbers shall be rounded up to the higher of the two whole numbers; or

(ii) A fractional number below the midpoint between the two consecutive whole numbers shall be rounded down to the lower of the two whole numbers.

(b) The test apparatus and instruction for testing pin-based fluorescent lamps packaged with ceiling fan light kits that have pin-based sockets shall conform to the requirements specified in section 1, ''Definitions,'' and section 3, ''Energy Efficiency Specifications for Qualifying Products'' of the EPA's ''ENERGY STAR Program Requirements for Residential Light Fixtures,'' Version 4.0, (Incorporated by reference, see §430.22). Record measurements at the resolution of the test instrumentation. Round off calculations to the same number of significant digits as the previous step. The final energy consumption value shall be rounded to a whole number as follows:

(i) A fractional number at or above the midpoint between the two consecutive whole numbers shall be rounded up to the higher of the two whole numbers; or